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EXAMINER

NGUYEN, THANH NHAN P

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2871

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/673,145	Applicant(s) SA ET AL.	
	Examiner (Nancy) Thanh-Nhan P. Nguyen	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/24/2007 for RCE.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 12-16 and 22-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 12-16, 22 and 23 is/are rejected.
- 7) ☒ Claim(s) 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatano et al (US 6,320,629) in view of Kwak (US 6,384,878), Gu et al (US 6,359,672) and Watanabe et al (US 2003/0086041).

Regarding claims 1, Hatano et al discloses a liquid crystal display device, comprising: a transparent insulating substrate (101a); a gate line (104) and a gate electrode on the transparent insulating substrate; a gate insulating film (105), an active layer (130), source (132a) and drain electrodes (132b), and a data line (116) on the transparent insulating substrate; a passivation film (106, 107) formed on the transparent insulating substrate including the source and drain electrodes and the data line; a compensation film (108) formed in a pixel region to contact the passivation film; a pixel electrode (112) formed on at least the compensation film; and the compensation film is only located under the pixel electrode [figs 1 & 2; col. 7, lines 55-67].

Hatano et al lacks disclosure of an ohmic contact layer in thin film transistor.

Kwak discloses an ohmic contact layer (301) in thin film transistor for improving electrical characteristics formed between the source electrode (210) and the semiconductor (300) and between the drain electrode (220) and the semiconductor

layer (300), [fig. 5; col. 5, lines 23-26]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have an ohmic contact layer in thin film transistor for improving electrical characteristics form between the source electrode and the semiconductor and between the drain electrode and the semiconductor.

Hatano et al further lacks disclosure of the pixel electrode overlaps the data line.

Gu et al discloses the pixel electrode (3) overlaps the data line (5), [fig. 1], for the benefit of increasing the pixel aperture ratio (or pixel opening size) of the liquid crystal display, [col. 5, lines 41-44]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the pixel electrode overlaps the data line for the benefit of increasing the pixel aperture ratio (or pixel opening size) of the liquid crystal display.

Regarding claim 2, Hatano et al lacks disclosure of wherein the pixel electrode includes ITO.

Watanabe et al discloses the pixel electrode (7), [fig. 11], includes ITO for the benefit of having high optical transmissivity, [par. 0144]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have pixel electrode includes ITO for the benefit of having high optical transmissivity.

Claim 3 is met the discussion regarding claim 1 rejection above.

Claim 4 is met the discussion regarding claim 2 rejection above.

Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatano et al (US 6,320,629) in view of Nakamura et al (US 6,582,862).

Regarding claim 12, Hatano et al discloses a liquid crystal display device comprising a thin film transistor substrate (101a); a pixel electrode (112) formed on the thin film transistor substrate; a color filter substrate (102a); a common electrode (122) formed on the color filter substrate; a liquid crystal material (103) formed between the thin film transistor substrate and the color filter substrate; a compensation film (108) at least disposed between the pixel electrode and the thin film transistor substrate to contact the pixel electrode within a pixel region, wherein the compensation film compensates for phase variations of light transmitted through the liquid crystal material and is only located under the pixel electrode [figs. 1 and 2].

Even though Hatano et al lacks disclosure of a black matrix formed on color filter, it would have been obvious to one ordinary skill in the to have black matrix form on color filter for the benefit of preventing the leakage light, as evidenced by Nakamura et al, [fig. 1, element 6], and therefore, this limitation does not patentably distinguish the invention.

Regarding claims 13-16, Hatano et al lacks disclosure of an overcoat film formed between the compensation film and a color filter film on the color filter substrate; wherein overcoat film is formed between red, green and blue color filter, contacted a black matrix formed between the color filter layers; and contacted the color filter layers.

First, Nakamura et al discloses an overcoat film (8) formed on and between color filter film (7R, 7G, 7B), contacted black matrix (6) wherein black matrix formed between

color filters layer, and contacted the color filter, [fig. 1]. Further, it was well known to have overcoat film formed on color filter films at least for the benefit of being electrical insulating between the color filter and an electrode formed there on, and therefore, these limitations (in claims 13-16) do not patentably distinguish the invention.

Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kataoka et al (US 6016178) in view of Zhong et al (6707067), US Kwak (US 6,384,878), Gu et al (US 6,359,672) and Watanabe et al (US 2003/0086041).

Regarding claim 22, Kataoka et al disclose (fig. 7) a liquid crystal display device, comprising: a transparent insulating substrate (2); a gate line and a gate electrode (G) on the transparent insulating substrate; a gate insulating film, an active layer, source (S) and drain electrodes (D), and a data line (21) on the transparent insulating substrate; a passivation film (13r/13g/13b – color filter could be functioning as passivation film (see fig. 6C by Zhong et al) – emphasis added) formed on the transparent insulating substrate including the source and drain electrodes and the data line; a compensation film (7) formed in a pixel region to contact the passivation film; a pixel electrode (4b) formed on at least the compensation film; the compensation film is only located under the pixel electrode; and wherein the compensation film (7) is formed with a single uniform layer.

Kataoka et al lacks disclosure of an ohmic contact layer in thin film transistor.

Kwak discloses an ohmic contact layer (301) in thin film transistor for improving electrical characteristics formed between the source electrode (210) and the semiconductor (300) and between the drain electrode (220) and the semiconductor

layer (300), [fig. 5; col. 5, lines 23-26]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have an ohmic contact layer in thin film transistor for improving electrical characteristics form between the source electrode and the semiconductor and between the drain electrode and the semiconductor.

Kataoka et al further lacks disclosure of the pixel electrode overlaps the data line.

Gu et al discloses the pixel electrode (3) overlaps the data line (5), [fig. 1], for the benefit of increasing the pixel aperture ratio (or pixel opening size) of the liquid crystal display, [col. 5, lines 41-44]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the pixel electrode overlaps the data line for the benefit of increasing the pixel aperture ratio (or pixel opening size) of the liquid crystal display.

Claim 23 is met the discussion regarding claim 22 rejection above.

Response to Arguments

Applicant's arguments with respect to claims 1-, 12-16, 22 and 23 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

Claim 24 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reason for allowance: There is no prior art of record that teaches or suggests a liquid crystal display device comprising a relationship of various elements as claimed with the specific allowable subject matter cited in the following:

- a color filter substrate including a black matrix
- a compensation film at least disposed between the pixel electrode and the thin film transistor substrate to contact the pixel electrode within a pixel region
- wherein the compensation is only located under the pixel electrode
- wherein the compensation film is formed with a single uniform layer

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6621543.

US 5926242.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to (Nancy) Thanh-Nhan P. Nguyen whose telephone number is 571-272-1673. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the


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Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

(Nancy) Thanh-Nhan P Nguyen
Examiner
Art Unit 2871

TN


David Nelms
Supervisory Patent Examiner
Technology Center 2800